Management of Community-Acquired Pneumonia (CAP) in Non-Pregnant Adults

Clinical syndrome consistent with CAP based on signs/symptoms AND infiltrate on chest radiography

Determine outpatient VS inpatient treatment based on:

- ☐ Clinical judgment **AND**
- ☐ Clinical prediction rule for prognosis
  - ☐ Pneumonia Severity Index (PSI) preferred over CURB-65

Reference: AM J Respir Crit Care Med; 2019; 200(7):

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OUTPATIENT *

Assess for comorbidities

- Chronic heart, lung, liver or renal
- Diabetes
- Alcoholism
- Malignancy
- Asplenia

NO → **Recommended empiric therapy**

Amoxicillin 1 gram three times daily
OR
Doxycycline 100 mg twice daily
OR
Macrolide (if pneumococcal resistance is <25%)

YES → **Recommended empiric therapy**

Combination therapy of amoxicillin/clavulanate **or** cephalosporin^ + macrolide
OR
Combination therapy of amoxicillin/clavulanate **or** cephalosporin + doxycycline
OR
Monotherapy with respiratory fluoroquinolone†

^ *cefpodoxime or cefuroxime*

Outpatient Treatment Strategies** are for adults with no risk factors for methicillin-resistant *Staphylococcus aureus* (MRSA) or *Pseudomonas aeruginosa

* Risk factors include prior isolation of MRSA or *P. aeruginosa* from the respiratory tract in the last 12 months or hospitalization **AND** receipt of parental antibiotics in the last 90 days

Key Points

- Obtain a MRSA nasal PCR to identify patients that require MRSA coverage *(and those that do not)*
- 5 days of antibiotic therapy is recommended for patients with an appropriate initial response to therapy and who are clinically stable
- Antibiotic therapy for CAP due to *Staphylococcus aureus* or *Pseudomonas aeruginosa* should be continued for at least 7 days in patients with an appropriate initial response to therapy
- Testing for influenza is recommended **if** it is prevalent in the community
- Testing for *Legionella* is recommended **if** indicated by epidemiological risk factors

Note: Assess for antibiotic allergies and use alternative agents as appropriate. Suggested antibiotic doses are for normal renal function; Adjust for renal impairment when necessary.

This is intended only as a guide for evidence-based decision-making. It is not intended to replace clinical judgment.

INPATIENT

Assess for severity of CAP

Severe CAP

Additional Diagnostic Studies

- *Legionella* antigen testing
- Pneumococcal urinary antigen
- Blood AND respiratory cultures prior to antibiotic therapy

Severe CAP with risk factors for MRSA or *P. aeruginosa*
OR
Non-Severe CAP with prior respiratory tract isolation of MRSA or *P. aeruginosa*

Type of risk factors for MRSA or *Pseudomonas aeruginosa*

Severe CAP with recent hospitalization AND IV antibiotic exposure:

Vancomycin **OR** linezolid
PLUS
Combination therapy with antipseudomonal beta-lactam + macrolide
OR
Combination therapy with antipseudomonal beta-lactam + respiratory fluoroquinolone†

Severe or Non-Severe CAP with prior respiratory isolation of *Pseudomonas aeruginosa:*

Combination therapy with antipseudomonal beta-lactam + macrolide
OR
Combination therapy with antipseudomonal beta-lactam + respiratory fluoroquinolone†

Severe or Non-Severe CAP with prior respiratory isolation of MRSA:

Add vancomycin **OR** linezolid to standard CAP therapy

CAP severity

Severe CAP
MRSA and *Pseudomonas* NOT isolated

Recommended therapy for Severe CAP

Combination therapy with beta-lactam + macrolide *
OR
Combination therapy with beta-lactam + respiratory fluoroquinolone† *
(*If neither macrolide or fluoroquinolone can be used, doxycycline can be substituted)

Change therapy based on culture results, if needed

Non-Severe CAP

Prior isolation of MRSA **AND/OR** *Pseudomonas aeruginosa* from the respiratory tract within 1 year

YES → Obtain blood **AND** respiratory cultures **prior** to antibiotic therapy (if not previously obtained)

NO → Hospitalization **AND** exposure to IV antibiotics within 90 days

YES → Obtain blood **AND** respiratory cultures **prior** to antibiotic therapy (if not previously obtained)

NO

Non-Severe CAP ONLY with recent hospitalization and IV antibiotic exposure as a risk factor

Recommended empiric therapy for Non-Severe CAP

Combination therapy with a beta-lactam + macrolide
OR
Monotherapy with respiratory fluoroquinolone†
OR
Combination therapy with beta-lactam + doxycycline (*If macrolide and fluoroquinolone are contraindicated*)

Non-Severe CAP
MRSA and *Pseudomonas* NOT isolated

Change therapy based on culture results, if needed

APPROPRIATE clinical response

- Tolerating oral intake
- Normal mental status or at baseline
- Resolution of vital sign abnormalities (no tachycardia, no tachypnea, hemodynamically stable, supplemental oxygen needs improving or at baseline, afebrile)

APPROPRIATE clinical response

Transition to oral antibiotics and discharge as soon as all clinical stability criteria is met

Clinical WORSENING or INADEQUATE response

Consider the following:

- Wrong diagnosis or concomitant non-infectious disease
- Parapneumonic effusion, empyema or lung abscess
- Nosocomial superinfection
- Exacerbation of comorbid illness
- Drug fever

† moxifloxacin, levofloxacin or delafloxacin *(please note - the use of delafloxacin was not addressed in this guideline as it was not indicated for community-acquired bacterial pneumonia at the time it was published; it is currently FDA-approved)*